Simulating Operant Conditioning

1. Introduction

- The purpose of this study is to understand how individuals learn to control biofeedback. We are going to explore how people adapt to different kinds of biofeedback so we can better understand how biofeedback works via simple computer game.

2. Directions

- You are going to be asked to play a simple computer game with the link provided. Your goal is to find a hidden target (**There is NO! Orange dot on the actual screen, as in the Fig. 1**), in which the information of whether you have reached the target or not will be depicted on the feedback bar.
  Detailed directions are as follows:

1) Keyboard instruction

- The screen (Fig.1) comprises of the rotary knob(left) and the feedback bar(right).

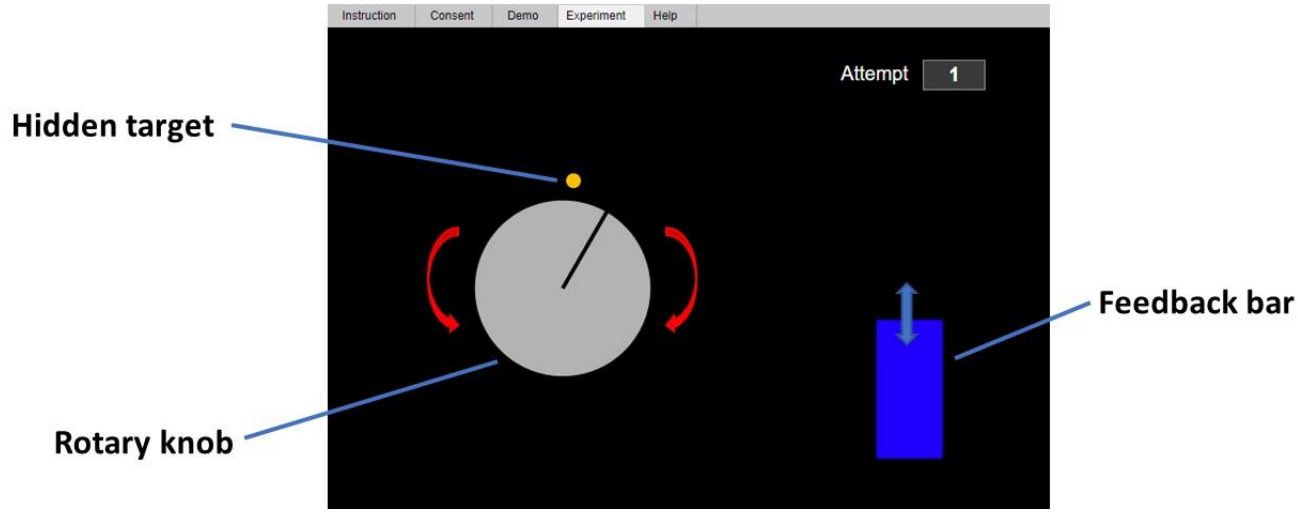

Fig. 1 Screen description and functionality

- You will use keyboard to rotate the knob(a/s/d/f) and update feedback bar(space bar)

  Key a: Counter Clock-wise (fast)

  Key s: Counter Close-wise (slow)

  Key d: Clock-wise (slow)

  Key f: Clock-wise (fast)

  Space bar: confirm and update feedback bar

2) Feedback instruction

- There are two types of feedback (Fig. 2a, b).
For Feedback type A (Fig. 2a), the feedback will change its height, but not the color. The bar height will decrease the closer you get to the target. Your goal for this type of the feedback is to make the bar as small(low) as possible. Also, for this feedback, score will not be calculated, and 'NaN' will be shown.

For Feedback type B (Fig. 2b), the feedback will change its color, but not the height. The bar will turn **Green** indicating that you have reached the range where the target may be located, and **Red** indicating that you have failed to reach the target boundary. Also, for this feedback, score will be calculated as accumulative success rate in percentage (%).

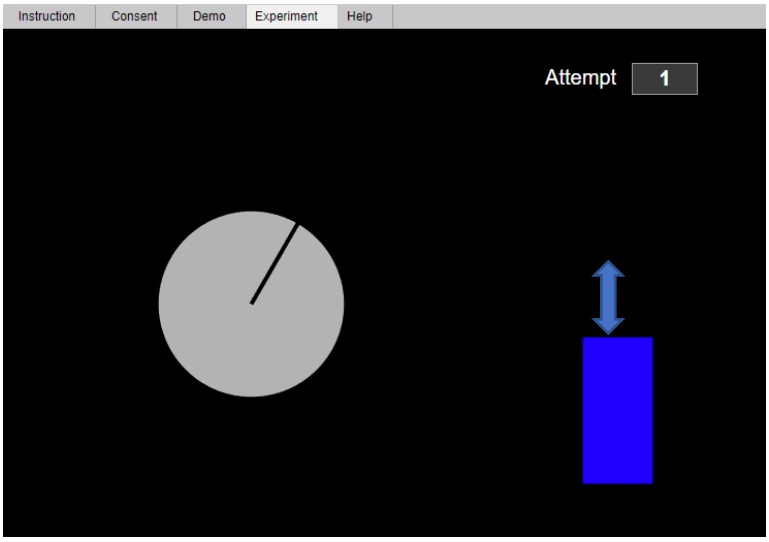

Fig. 2a Feedback type A

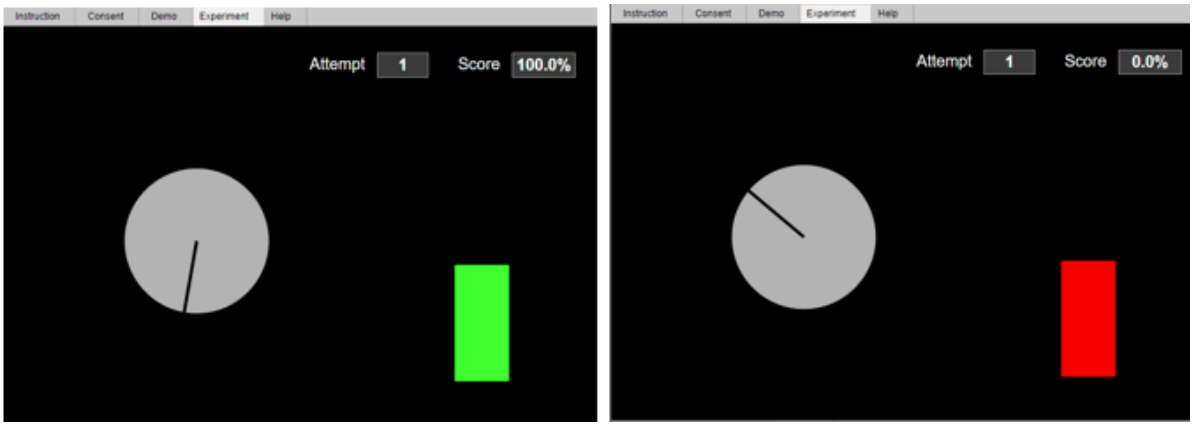

Fig. 2b Feedback type B

3) Task structure (Trial / Condition / Run)

- There are total of 6 conditions and for each of conditions you will be given 35 attempts. Once you have completed each condition, you will automatically be directed to the next condition. Completing 6 conditions (35 trials/cond) counts as 1 run(210 trials/run). You will be asked to complete 10 runs (2100 trials total). Please refer to Fig. 3 for the reference.

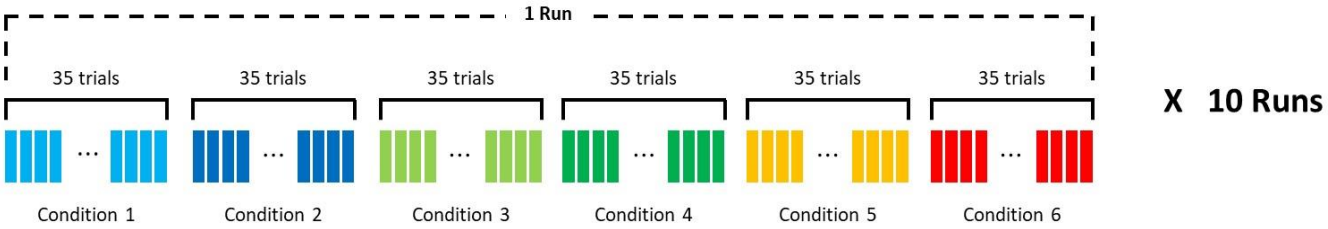

Fig. 3 Task structure

Also, in middle of the task, a prompt window (Fig. 4) may appear to check whether you are paying attention to the task or not. Simply click OK, and you will be able to resume working on this task.

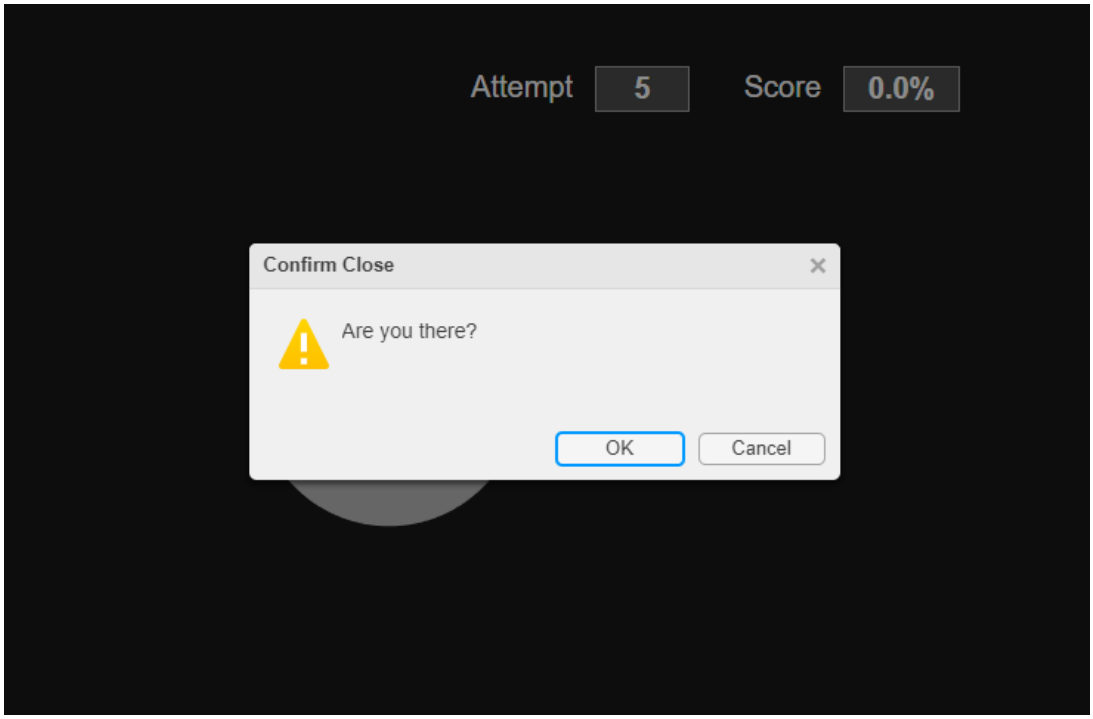

Fig. 4 Prompt window

3. Compensation

You will receive compensation at the rate of $10/session and up to an extra $10 depending on performance. Compensation is provided as cash or Amazon Gift Card equivalent. Payments will occur after completion of the study. No payment will occur if the study is not completed. You will be responsible for any taxes assessed on the compensation. Detailed compensation is described in the table below, which corresponds to the total score of the task.

Score	Compensation
0	$10(base) = $10
1 - 10	$10(base) + $2(extra) = $12
11 - 20	$10(base) + $3(extra) = $13
21 - 30	$10(base) + $4(extra) = $14
31 - 40	$10(base) + $7(extra) = $17
41 - 50	$10(base) + $10(extra) = $20

4. Contact information

If you have questions about your rights as research participant, or wish to obtain information, ask questions, or discuss concerns about this study with someone other than the researcher(s), please contact the following:

The University of Texas at Austin
Institutional Review Board
Phone: 512-232-1543
Email: irb@austin.utexas.edu